



***Safe, Reliable Service
at Just and Reasonable Rates:
Priorities, Challenges, and Opportunities***



**Commissioner Catherine J.K. Sandoval
California Public Utilities Commission**

**Stanford Law School
April 25, 2013
Stanford, California**





CPUC Mission: Promote Safe, Reliable Utility Service at Just and Reasonable Rates

- CPUC Regulates Investor-Owned (non-municipal):
- Energy Utilities (Electric and Natural Gas)
- Telecommunications Utilities Intrastate Services
- Water Utilities
- Rail Safety and Rail Crossings
- Conveyances such as Party Buses and
- Analyzes jurisdiction over new services such as Uber





CPUC is California Constitutional Commission

- CPUC authorized and formatted in the California Constitution
- CPUC Commissioners are Constitutional Officers of the State of California
- 5 Commissioners Appointed by the Governor, Confirmed by the California Senate





CPUC Mission: Promote Safe, Reliable Utility Service at Just and Reasonable Rates

- Ensure Utility Services and Markets promote safe, reliable, service at just and reasonable rates
- Some services are rate-regulated (CPUC approves prices for electricity, natural gas, water), some telecommunications services are not rate-regulated, though still rate regulation for rural telcos
- Focus on Environmental Sustainability
- Service to all Californians including rural and Low-income populations

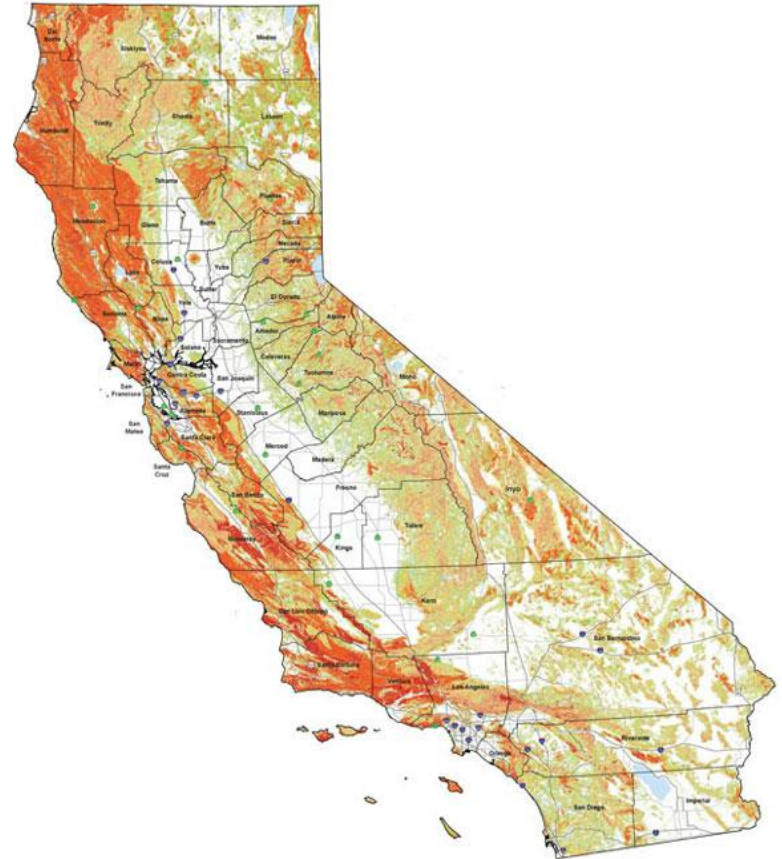




State of California

Demographics

- 38 million people in California
- 26 million live in Southern California
- Nearly 10 million live in Los Angeles County
- Vast geographic climate, linguistic, cultural, economic diversity
- 3.1 million California Households with incomes at or below 150% of federal poverty level
- Rural areas the size of the State of Kentucky
- Rural population the size of the State of Vermont





Summer Energy Challenge Without San Onofre Nuclear Generating Station (SONGS)

Safety and Reliability

- The CPUC considers long term planning for energy and transmission resources and evaluates power purchase agreements
- The Independent System Operator (ISO) is a non-profit corporation that maintains the reliability of California's electric power grid
- ISO plans for major contingency scenarios
 - The outage of one SONGS generating unit
 - Loss of San Diego's eastern transmission and largest generator
 - Currently both SONGS generating units are unavailable





Lessons Learned From SONGS Outage

Safety and Reliability

- Los Angeles Basin and San Diego areas must have local generation to serve all consumers
- Role of voltage support
- Demand Response: efforts to lower energy use by residents and businesses
- Demand Response and Energy Efficiency Programs must reach all Californians, particularly those who may be affected by outages
- Empower behavioral and structural changes to reduce energy use, e.g. energy efficient lighting, appliances, information to empower customers





State Demand Versus Supply

- Statewide projected peak demand = 46352 MW
- Generation without SONGS = 48081 MW
- Potential Hydro Shortfall = -1137 MW
- Demand Response (Conservation) = 2296* MW



***Demand response is customers reducing their consumption at critical times**

Note: Transmission bottlenecks limit ability to transmit power from Northern to Southern California so regional resources are key.

Source: SDG&E, "The San Diego Summer Outlook", July 2012





CPUC Actions to Mitigate Potential for Outages

Safety and Reliability

- **Generation**

- Return Huntington Beach units 3 & 4 to service (complete) and convert to synchronous condensers (for grid voltage support)
- Install capacitors in existing substations (Expected completion May 1)
- Accelerate new generation resources South of Lugo (El Segundo, Sentinel, Walnut Creek)
- Ensure that existing generation is well-maintained and available
- Explore additional generation from existing CHP facilities

- **Transmission**

- SDG&E Sunrise Powerlink (Complete)
- SCE to accelerate Barre-Ellis transmission upgrade and split from two to four lines (Expected completion mid-June)

- **Demand Response (DR, Conservation on demand)**

- Fully utilize available DR and seek additional military and public agency DR
- Implement more aggressive multi-lingual/multi-cultural outreach (CPUC Decision 12-04-045)



Communications/Customer Awareness Campaign

Safety and Reliability

PAID MEDIA

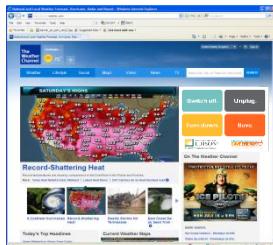
Print



Search



Display Ads



Billboard / Bus Shelters



Radio

"When it's summer, temperatures run high, and so can energy use...but it doesn't take much energy to save energy."

At Southern California Edison, we want to make it easier to help you save electricity. Here are some helpful, simple ways to save...

Purchase a new ENERGY STAR most efficient fridge and get 75 dollars.

And don't forget to use less electricity between the hours of noon and 6pm

Let's save energy together this summer.

For more tips, visit SCE-dot-com-slash-summer.

For Over 100 Years...Life. Powered By Edison."

Image source: google images of SCE's 2012 campaign

OWNED MEDIA

SCE.com/summer



Facebook.com/SoCalEdison



Twitter.com/SoCalEdison



PUBLIC AGENCY OUTREACH

Briefings, events and presentations



News Stories



DIRECT TO CONSUMER/BUSINESS

Email



Direct Mail



Collateral



BCD Reps



COMMUNITY INVOLVEMENT

Community Events



Community Forums



Pamela Deahl, SCE Manager, Business Solutions; Sandy Close, E.D., New America Media, Moderator; Veronica Gutierrez, SCE VP, Local Public Affairs

Community Based Organizations



Multi-Cultural Campaign Execution

Safety and Reliability

SPANISH

VIETNAMESE

CHINESE

KOREAN

Ahorra energía con poca
ENERGÍA.

AHORROS ELÉCTRICOS DE VERANO PARA SU EMPRESA

Proponga su empresa a su propia oficina para el ahorro de energía.

Comparta a corto plazo para la reducción temporal de los costos eléctricos.

Comparta a largo plazo para la reducción permanente de los costos eléctricos.

EDISON

Este negocio está logrando cambios positivos.

Este verano, estamos ayudando a nuestra comunidad al tomar opciones más inteligentes de ahorro energético.

sca.com/energypoints



ESTE VERANO, PREPÁRATE A AHORRAR Y VE AL SEGURO.

EDISON

Chúng cần phải tiêu nhiều năng lượng để
TẾT KIỆM NĂNG LƯỢNG

MÙA HÈ HƯỚNG DẪN SỬ DỤNG NĂNG LƯỢNG

EDISON

CHƯƠNG TRÌNH GIẢM GIÁ MÙA HÈ

EDISON

Nơi đây đang góp phần tiết kiệm năng lượng.

Mùa hè này, chúng tôi đang thực hiện chiến dịch khuyến khích bạn chọn tiết kiệm năng lượng thông minh hơn cho cộng đồng chúng ta.

sca.com/energypoints



一點不費力
輕鬆省電力

更多節能方法——全年使用

EDISON

我們正在為節能而努力。

這個夏天，你會發現這裡的燈光點點點，溫度稍微低一點，這是因為我們正在為社區付出自己的一份心力。

sca.com/energypoints

信息來自 Southern California Edison

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에너지 절약에는 많은 에너지가 필요하지 않아요

여름철 에너지 가이드

EDISON

본 사업체는 변화에 동참하고 있습니다.

이번 여름, 저희는 지역 사회를 위해서 더 세련된 에너지 절약을 실천합니다.

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Images of SCE's 2012 campaign





Customer Empowerment and Convergence

- Empower customers through more information about energy use
- Enable the grid to transmit repair messages
- Convergence of energy information and communication technology





U.S. Dept. of Energy Green Button Initiative Apps for Energy Student Award Grand Prize: wotz

Customer
Empowerment





Challenges to Safety, Reliability, and Affordability: Climate Change

Climate Change

- **Extreme weather events make the state's power supply more vulnerable**
 - Key transmission corridors are vulnerable to wildfire, and coastal power plants are vulnerable to flooding. Electrical transmission lines lose 7 percent to 8 percent of their transmitting capacity in high temperatures, just when demand rises
- **California will continue to get hotter. Expected temperature increases, less cool down at night affects people, crops, transformers, and power resources**
 - Statewide average temperatures increased by about 1.7 degrees Fahrenheit from 1895 to 2011. Temperatures are expected to rise by 2.7 degrees above 2000 averages by 2050. Wildfire risk will be higher, possibly more than doubling before 2085 in some areas.
- **California will get drier. Less snow pack limits water resources and power generation**
 - By the latter half of this century, dry water years are expected to increase by 8 percent in the Sacramento Valley and by 32 percent in the San Joaquin Valley, compared to the latter half of the 20th century.
- **California will see accelerated rising sea levels.**
 - Sea level along California's coastline rose about 7 inches in the last century. The rate is expected to accelerate. By 2050, sea level could be 10 to 18 inches higher than in 2000.
- **Limiting carbon emissions will improve health of Californians and may forestall climate change**





Greenhouse Gas Reduction Initiatives

Climate Change

- California Has Implemented Carbon Market
- Electric utilities get allowances for 90% of projected carbon emissions. They must cut back emissions or buy or trade allowances for remaining 10% of carbon emissions: Cap and Trade
- Creates incentives to reduce emissions
- Internalizes externalities
- Latino children most likely to have asthma, biggest factor is living close to freeways
- Asthma is number one cause of absenteeism in LA Unified School District
- CPUC Promoting Greening of Transportation through Electric and
- Natural Gas Vehicles

Source: CPUC Docket # R. 11-03-012





Greenhouse Gas Reduction Initiatives

- CPUC December 2012 decision directs 85% of revenues from the sale of greenhouse gas emission allowances allocated to investor owned utilities as both a customer rate reduction and semi-annual “climate dividend.”
- Program seeks to minimize impact on emissions-intensive trade-exposed industries, such as cement and glass manufacturing.
- Per Senate Bill 1018, investor owned utilities will use allowance revenue to offset the Cap-and-Trade costs in small business electricity rates





Goal: 33% of California's Electrical Energy will come from Renewable Sources by 2020

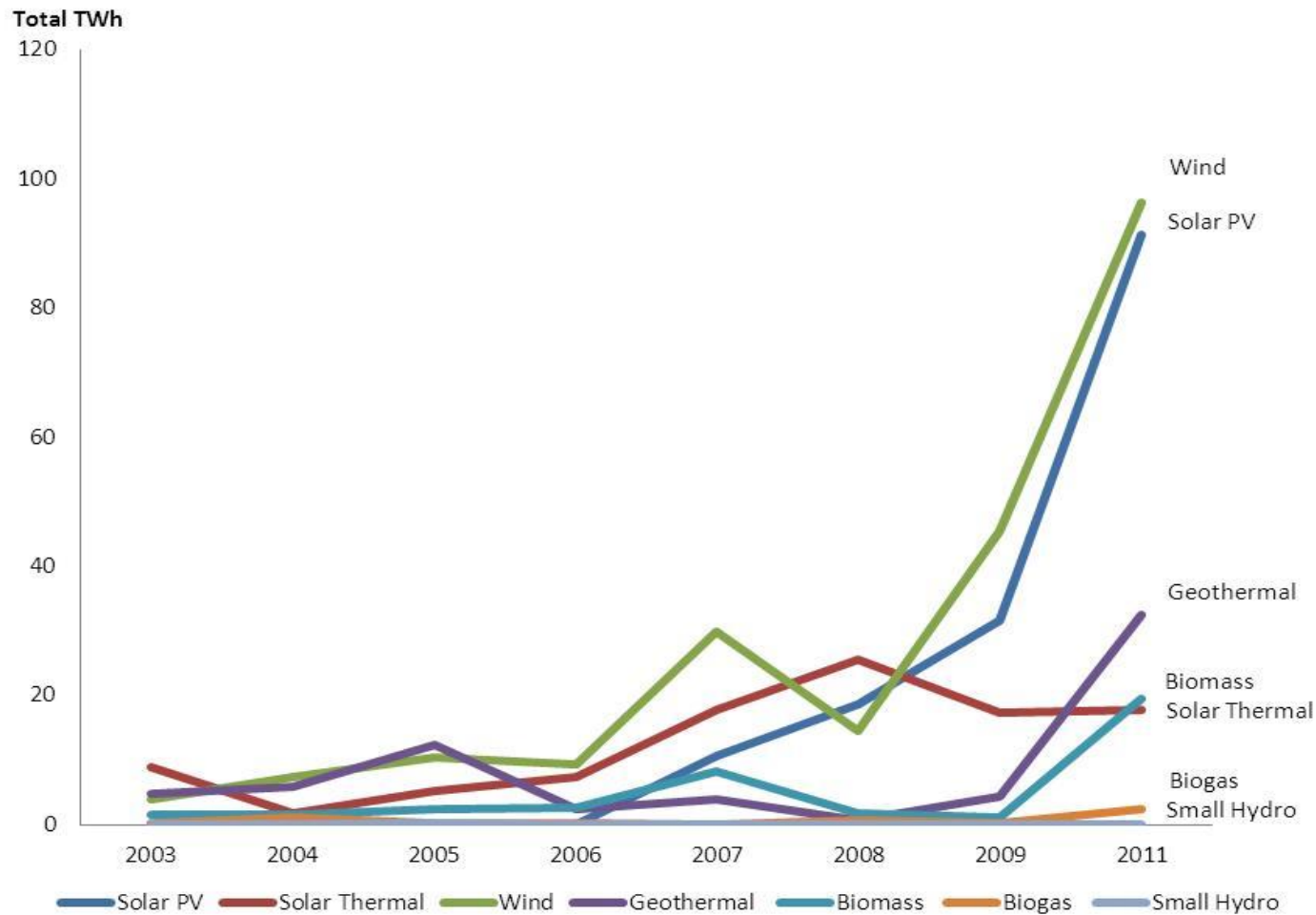
- Governor Brown signed legislation mandating that 33% of California's Electrical Energy come from Renewable Sources by 2020
- CPUC Implementing Renewable Portfolio Standard (RPS)
- RPS Standard Fostered Growth of and Market for Renewable and Storage Technologies in California
- Large IOUs achieved overall 19.8% RPS in 2012
 - PG&E: 19% (17.7% in 2010)
 - SCE: 20.6% (19.4% in 2010)
 - SDG&E: 20.3% (11.9% in 2010)
- California Utilities well on their way to 33% renewable generation by 2020

Source: CPUC Energy Division 3rd and 4th Quarter 2012 Compliance Report





Increasing Participation From Solar PV



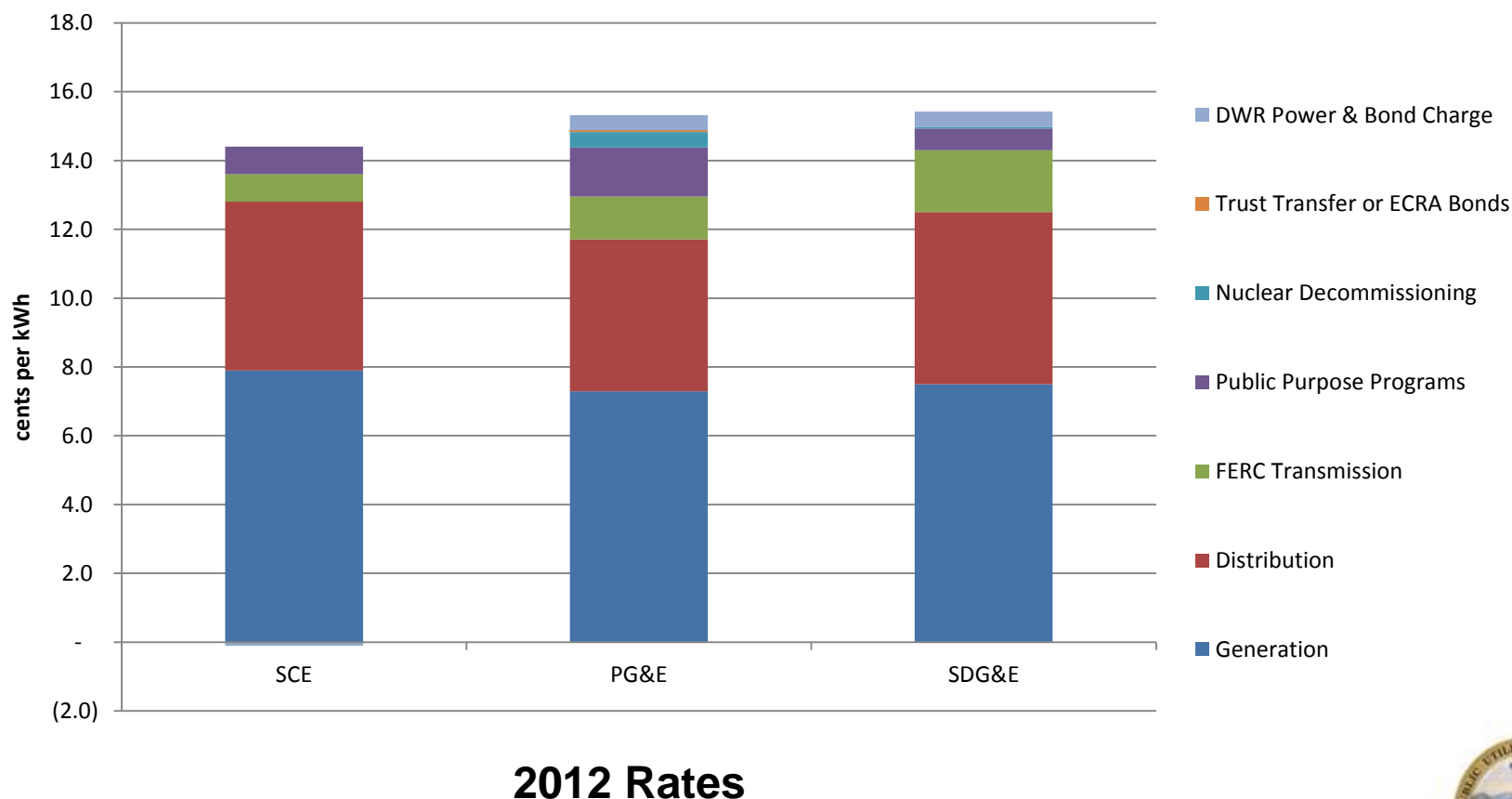
Source: California Public Utilities Commission, 4th Quarter 2011





Generation and Distribution Costs Are The Largest Electric Rate Components

Cost Containment





Governor's Low Income Customer Utility Service Priorities

Cost Containment

- Increase energy savings and efficiencies in services to low income households
- Decrease energy usage and burden for low income participants
- Increase the number of households leveraging both CPUC and State Consumer Services Department (CSD) resources
- Decrease overall costs to programs serving low-income populations
- Document health and safety outcomes, as well as societal benefits





Low Income Service Initiatives

CSD-CPUC pilots:

1. Data Sharing (all IOUs and CSD local service providers)
 - Coordinate workflow and customer data systems
2. Solar Thermal Hot Water Pilot (All gas serving IOUs)
 - Offer solar water heaters to qualified low-income households.
3. High Energy Use/Underserved/High Energy Burden Targeted Population Pilot (PG&E):
 - Assist vulnerable customers facing an emergency or utility service cut-off.
4. Bulk Purchasing Pilot (SCE):
 - Coordinate bulk purchasing to offer greater economies of scale for low-income programs. Test distribution and implementation systems.

CPUC Low Income Oversight Board:

- CPUC on Utility Issues Affecting Low-Income Californians





California State Law and Low-Income Customers

Cost Containment

State Law recognizes that electricity, gas, and water service are basic necessities:

PU Code 382 (b): All Californians should be able to afford energy.

PUC Code 379 (c) (2): Energy and gas services are necessities.

PU Code 2790: Energy Efficiency is a way of reducing energy-related hardships for low-income customers. California law established Energy Efficiency programs for low-income customers in 1987 (Senate Bill 845)

PU Code 739.1: Discounts for low-income electric and natural gas customers begin in 1989 (Senate Bill 987)

PU Code 739.8: Authorizes Rate Assistance for low-income water customers





Water and Energy – The Nexus

Water/Energy Nexus

- **Water Requires Energy**
 - To “Produce” or “Obtain” it
 - To Move it to where it is needed
 - To Treat it for Potability
 - To Heat it or Cool it
- **Steps to Use Less Water or Increase Efficiency in Production and/or Consumption Result in Savings to Society**





Savings in Use of Water

- State Goal to Reduce Per Capita Consumption by 20-percent by 2020
- Residential water use is declining rapidly
 - Use of Inclining-block rates, the more you use, the higher the rate for each tier of quantity (Conservation Rates)
 - Education programs for consumers
 - Garden Replacement Incentives
 - Water Revenue Adjustment Mechanisms remove incentive to sell more – remove financial benefit – Modeled on Energy programs
- Water Meters are now required throughout the state
 - Progress begins with careful measurement
- Energy Savings Assistance Program (ESAP) Decision, D12-08-044 promotes:
 - High-Efficiency Showerheads and Faucet Aerators
 - Save Water and Energy for Water Heating





Turn Over a New Leaf



Lavender: A great water wise perennial

Grow a Water Wise Garden this Spring.

Turn over a new leaf this year with a low-water garden. Plants needing little water save you money while protecting natural resources.

Dozens of water-saving flowers, plants, and shrubs are available to beautify your home. Lavender from your local nursery or home improvement store is just one of many choices for color and a pleasing aroma around your yard.

We're Here to Help.

You can pick up a free guide to low-water gardens at our office at 511 Forest Lodge Road in Pacific Grove. When you're here, you can also select free water saving devices like low-flow showerheads, kitchen and bath aerators, hose nozzles, and more.

En esta primavera, cultive un jardín de mínimo riego. Las plantas que necesitan poca agua le ahorran dinero y a la vez protegen los recursos naturales.

**Conserving water is a shared responsibility for our company and our customers – a goal we can achieve together.
We're here to help.**



WE CARE ABOUT WATER. IT'S WHAT WE DO.®
(831) 646-3205 • www.californiaamwater.com



(831) 658-5601 • www.mpwmd.dstf.ca.us





Efficiency in Water Production

- **Pilot Programs in Pumping: Operational Efficiency Energy Program**
 - Difficulties in measurement – Results inconclusive
- **Energy Recovery in Pressure Reduction Systems**
 - Use of a Turbine-generator to replace a Pressure Reduction Valve
 - Example: Cal Water Service 325 kW installation under way – Power to be delivered to Edison
- **CPUC Water Action Plan of 2010**
 - Information and Policies to promote water conservation and efficiency





Energy - Telecommunications Nexus

Energy/Telco Nexus

Communications Depends on Energy – Our Economy Depends on Communications

Fire, Wind Storms: Poles and Pole Attachments

- Malibu Canyon Fire Investigation (I.09-01-018)
 - Settlement: \$6.9 million to state general fund; \$5.1 million to create Enhanced Infrastructure & Inspection Fund
 - Electric Utility and one phone company not part of settlement – litigation continues
- Southern California Wind Storms, Nov. 2011
 - Preliminary CPUC Staff Report Found High Incidence of Overloaded Poles
- Derecho, Summer 2012
 - Strong winds caused massive power and communications outages in several states
 - FCC has no vegetation/tree management rules or guidelines
 - Failure of Backup Power at cell towers compromised access to 911



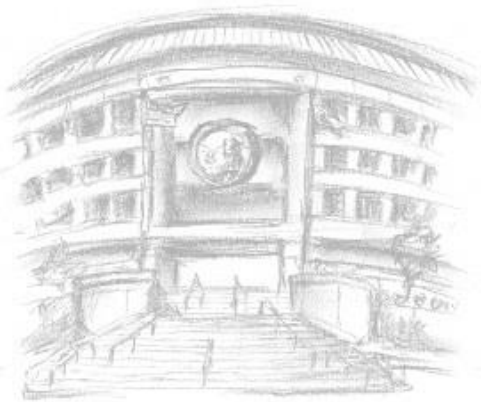
Overloaded Poles Failed in Southern California Wind Storms, late 2011





Conclusion: Guiding Principles

- **L**egal Standard
- **A**ccess; *Affordability; Availability*
- **W**idespread *Implications of Decisions*





Questions?

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